AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A system for ~~performing~~ providing a communication interface between a ~~first~~ satellite network and a ~~second~~ terrestrial network, comprising:

a gateway coupled to receive and transmit data between said ~~first~~ satellite network and said ~~second~~ terrestrial network, said gateway comprising a plurality of channel units; and

a control module, comprising means for monitoring signal quality of at least one of transmitted data and received data, operative to determine whether said signal quality is less than a predetermined standard and to select at least one ~~that selects ones~~ of said channel units to implement at least one algorithm in accordance with channel quality.

2. (original): The system of claim 1, further comprising: a microprocessor coupled to the control module that stores traffic information and performs statistical analysis and diagnostic activity in accordance with said traffic information; and a data storage device coupled to the microprocessor and configured to serve as a local resource manager that supports a network control center through exchange of said traffic information.

3. (currently amended): The system of claim 2, wherein said statistical analysis generates statistics on at least one of (a) power vs. time for a specified beam, (b) power vs. time vs. beam number for a specified frequency and (c) power vs. time vs. location for a specified frequency and a specified beam, wherein said ~~first~~ satellite network comprises multiple beams on a service link.

4. (original): The system of claim 3, wherein said microprocessor also performs interference estimation as a function of beam/geographical location of a use terminal to generate traffic models and corresponding diurnal variations in accordance with traffic on said system.

5. (original): The system of claim 2, wherein said microprocessor detects and correlates offline bit errors as a function of frequency and beam handovers, and transmits a code from a remote site to said control module as additions to said at least one algorithm, so as to alter said at least one algorithm.

6. (original): The system of claim 2, wherein said microprocessor is an operator interface with a graphical user interface and permits said user to perform said diagnostic activity.

7. (cancelled)

8. (original): The system of claim 1, wherein said control module is positioned one of external to said gateway and in said channel units of said gateway.

9. (original): The system of claim 1, wherein said plurality of channel units comprises: at least one high performance channel unit (HPCU) configured to implement a unique response; and at least one standard channel unit (SCU) configured to implement a nominal algorithm, wherein said control module selects said at least one SCU when channel quality is greater than or equal to a prescribed threshold, and said control module selects said at least one HPCU when said channel quality is below a prescribed threshold.

10. (original): The system of claim 9, wherein said unique response comprises said at least one algorithm selected from a plurality of computationally complex algorithms and in accordance with said channel quality, said computationally complex algorithms comprising at least one of interference suppression for narrow band suppression, a complex adaptive equalization to overcome nonlinear distortion and diversity processing for maintaining at least one of proper polarization and frequency.

11. (original): The system of claim 1, wherein said control module receives code that alters or replaces said at least one algorithm.

12. (original): The system of claim 1, wherein at a receive side of said system, said at least one algorithm comprises at least one of: advanced time and phase recovery implementations that are not implemented when said channel quality is greater than or equal to a prescribed threshold; spectral analysis of carriers by frequency domain analysis; interference

estimation; and characterization of system performance as said system migrates to a next generation, prior to implementation of said next generation.

13. (original): The system of claim 1, wherein at a transmit side of said system, said at least one algorithm comprises at least one of adaptive beam-forming and pre-equalization to correct for channel distortion.

14. (original): The system of claim 1, wherein said control module comprises: a pool of algorithms that stores said at least one algorithm; a local memory device that stores status information for said channel units; and a controller that selects said at least one algorithm from said pool of algorithms and transmits said at least one algorithm to said selected channel units, in accordance with said status information received from said local memory device.

15. (currently amended): A method of ~~performing~~ providing a communication interface between a ~~first~~ satellite network and a ~~second~~ terrestrial network, comprising the steps of:

(a) at least one of receiving and transmitting data between said satellite network and said terrestrial network via a plurality of channel units;

(b) monitoring signal quality of ~~a~~ at least one channel unit to generate a corresponding signal quality output;

(~~b~~c) determining whether said signal quality output is less than a prescribed threshold; and

(~~c~~d) performing a first operation if said signal quality output is less than said prescribed threshold, and performing a second operation if said signal quality is greater than or equal to said prescribed threshold~~; and (d) performing at least one of transmission and reception~~.

16. (original): The method of claim 15, wherein said first operation comprises implementing an unique code in a high performance channel unit (HPCU) and said second operation comprises implementing a nominal code in a standard channel unit (SCU).

17. (original): The method of claim 16, wherein said implementing said unique code in said HPCU comprises: (a) assigning said HPCU to a channel having said signal quality below

said prescribed threshold; and (b) executing one of default computationally intensive signal processing algorithms and identifying an unique algorithm for said channel unit based on corresponding predetermined channel metrics, wherein end-to-end functionality is accomplished in accordance with said unique algorithm identified by a control module.

18. (original): The method of claim 17, wherein said unique algorithm comprises one of: interference suppression for narrow band suppression; a complex adaptive equalization to overcome nonlinear distortion; diversity processing for maintaining at least one of proper polarization and frequency.

19. (original): The method of claim 17, wherein during reception, said unique algorithm performs one of: implementing advanced time and phase recovery that is not implemented when channel quality is greater than or equal to a prescribed threshold; analyzing spectra of carriers by frequency domain analysis; estimating interference; and characterizing system performance as said system migrates to a next generation, prior to implementation of said next generation to ensure backwards compatibility.

20. (original): The method of claim 15, further comprising one of altering and replacing said at least one algorithm with a next generation algorithm for an upgrade, received by a control module.

21. (currently amended): The method of claim 15, further comprising: storing communication traffic information and performing statistical analysis and diagnostic activity in accordance with said traffic information; and using a data storage device configured to serve as a local resource manager to support a network control center through exchange of said information, wherein said statistical analysis generates statistics on at least one of (a) power vs. time for a specified beam, (b) power vs. time vs. beam number for a specified frequency and (c) power vs. time vs. location for a specified frequency and a specified beam, and wherein said ~~first~~ satellite network comprises multiple beams on a service link.

22. (original): The method of claim 21, further comprising at least one of: performing interference estimation as a function of beam/geographical location of a use terminal to generate traffic models and corresponding diurnal variations in accordance with said traffic information;

and detecting and correlating offline bit errors as a function of frequency and beam handovers, and transmits code from a remote site to a control module as additions, so as to alter said algorithm.

23. (original): The method of claim 21, wherein a user performs said diagnostic activity.

24. and 25. (cancelled)